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Inner Monologue: Relationship to Personality and Psychopathology

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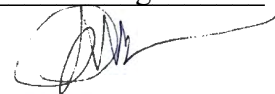
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Abstract

The purpose of this study is to investigate the function of internal monologue and investigate its relation to personality and psychopathology. Internal monologue or self-talk are habits of private speech that may serve to internally guide, comfort, and criticize (Brintahupt 2019; Morin, Duhnych and Racy, 2018). We explored the relationship of self-talk to the factor of extraversion, how self-talk impacts the relationship with self, and if mental disorders such as anxiety and depression impacted the way in which one engages in self-talk. 96 college-age participants completed a survey consisting of quantitative and qualitative measures that asked about self talk. Findings showed that extraversion was unrelated to self-talk tendencies. Participants' responses demonstrated that positive internal monologue was essential in their day-to-day self-regulatory process and is rooted in their identity. People experiencing anxiety or depression reported that their self-talk was negative, critical, and often made them less likely to engage in self-talk. Finally, COVID-19 impacted self-talk in opposing directions by either supporting people through forced isolation or by creating a harsh internal environment consisting of negative self-talk. We conjecture this negative self-talk could be contributing to, or simply reflecting, increasing rates of anxiety and depression during the pandemic (Abbott, 2021).

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Introduction

My initial research question was sparked by curiosity about the function of inner monologues. Inner monologues are the different internal "voices" that represent parts of the self as well as other people and aspects of culture (Oleś et al., 2020). Internal monologues, also referred to as "self-talk" (see Brinthaupt et al., 2009), are habits of private, inner speech that play a role in various processes such as problem-solving, decision making, rehearsing communication, self-reflection, and self-soothing (Morin, Duhnych and Racy, 2018). Self-talk has been demonstrated to be important for inhibiting impulses, guiding one's courses of action, and monitoring one's goal progress (Brinthaupt et al., 2009). Other research shows that placing one's self in a third-person position while participating in self-talk helps with emotional regulation and coping with negative experiences (Orvell et al., 2020).

Narrative psychologists suggest that the self is a product of self-narration or self-talk (Brinthaupt et al., 2009) and for many people, self-talk provides a central thread of conscious experience, integral to their sense of a coherent, enduring self (Brinthaupt, 2019). Essentially, the self is constructed and governed in part through internal monologue. Lapping-Carr and Heavy (2017) used the method of introspection in an effort to understand pristine inner experience, which is a similar phenomenon to internal monologue. They define pristine inner experience as mental thoughts, feelings, mental imagery, and sensation (Lapping-Carr & Heavey, 2017). Lapping-Carr and Heavey found that descriptive experience sampling (DES) was able to produce high-fidelity descriptions of pristine inner experience, allowing for a stronger understanding of one's self.

Self-talk has also been linked to varied states of mental health. For example, according to Lysaik (2019), dysfunctional beliefs are often expressed in inner speech. Anxious and emotionally labile individuals are more likely to have ruminative and confrontational inner monologues. Research shows that intrusive and ruminative thoughts may develop into serious clinical disorders (Brinthaupt, 2019). At the same time, cognitive disruption theory predicts that a person experiencing cognitive disruption (defined as anxiety, obsessive-compulsive tendencies, and schizotypy) will use their internal monologue to self soothe, clarify, or interpret those feelings (Brinthaupt 2019). Lysiak (2019) concluded that negative aspects of self-talk correlate to anxiety while positive self-talk was correlated with lower levels of depression.

Everyone has inner monologues, yet people may differ in the amount and type of inner monologues they experience. One factor that may account for individual differences in self-talk is personality style. Specifically, internal self-narration may relate to the dimension of introversion/extraversion. Extraversion is the tendency to obtain gratification from the external environment (Vreeke & Muris, 2012). Introversion, on the other hand, refers to one's tendency to avoid intense social stimulation. According to the social isolation hypothesis (Brinthaupt, 2019), introverted people experience more self-talk as they are motivated to manage their social interactions using their internal monologue. This is especially so when their social interactions are unsatisfactory (Brinthaupt, 2019).

Brinthaupt's studies showed that loneliness was a factor contributing to self-talk frequency, which suggests that introverted people with less socially satisfying experiences would have increased rates of self-talk frequency. Reichl (2012) examined whether individuals with a high need to belong and feelings of loneliness tend to compensate for lack of social contact by self-

talk. Studies showed that both the need to belong and loneliness were positively correlated with self-talk frequency.

Current Study

The current project investigates the interrelationships between internal monologue, personality, and anxiety/depression in a sample of college students. To measure inner monologue I also measured perceptions of self-talk using open-ended reflections. I have several hypotheses that follow:

1. I predict that people who score low on the scale of extraversion will tend to experience higher overall rates of internal monologue due to their lack of social interaction.

    a. Social assessment refers to self-talk that is related to a person's social interactions. (Lysiak, 2019) thus, I predict social assessment scores will be higher for those who are more introverted.

2. I anticipate there will be a stronger connection with the self when people experience higher rates of internal monologue.

3. I hypothesize that people who are experiencing higher levels of anxiety and depression will have higher rates of internal monologue. It is possible that the cognitive disruption caused by these disorders could either create self-talk that is either reassuring to the person or more negative self-talk, as it is characteristic of both disorders. High anxiety could produce more self-reinforcement as it focuses on positive events such as feeling proud or as if something good has happened. In turn, depression is more likely to be related to negative self-criticism.

a. I predict that people who score high on the personality trait of neuroticism will

also engage in more self-talk. Neuroticism compares with State-Trait Anxiety on

various anxiety factors such as nervousness and apprehension, however State-

Trait Anxiety (Zsido et al., 2020) is more transient/short term in comparison to a

neuroticism score. I speculate that neuroticism will also be associated with higher

rates of self-talk because of its relation to diagnosed anxiety disorders and perma-

nent effects on personality.

4) I predict increased self-talk due to the current situation of a global pandemic, which

has led to increased isolation and anxiety (Abbott, 2021).

Methods

Participants

The participants were recruited from the psychology department subject pool at Otterbein

University. A total of 96 participants were included in the study; 3 were gender non-conforming,

13 were male, and 80 were female. Ages ranged from 18-47, with a median age of 19 years old.

Participants were treated in accordance with ethical guidelines as outlined by the IRB (See Ap-

pendix A).

Materials and Procedure

Participants took an online survey using Qualtrics which consisted of several psychologi-

cal scales and open-ended items (See Appendix C). I used the Patient Health Questionnaire

(PHQ) (Gilbody et al., 2007) to measure depression. The PHQ is a 9-item measure asking ques-

tions related to depression (e.g., *little interest in doing things*) that are scored from 0-3, 0 being

not at all to 3 being *nearly every day*. I used the State-Trait Anxiety Inventory scale for anxiety

(Zsido et al., 2020) which is a 10-item scale consisting of 5 questions asking how participants

felt at the moment (e.g., *I feel upset*), and 5 questions about how one feels generally (e.g., *I worry too much about something that doesn't really matter*). These 10 items were on a scale of 1-4

with 1 being *not at all*, and 4 being *very much so*.

To assess introversion/extraversion and neuroticism, I employed the Big Five Inventory

(BFI) (John & Srivastava, 1999). The BFI is a 44-question scale that measures personality according to the big five dimensions of personality which consist of Extraversion, Agreeableness,

Contentiousness, Neuroticism, and Openness. For the purpose of this study, I used questions referring to extraversion and neuroticism. The introversion/extraversion is scored such that a high

score means more extraversion indicating that a person is more sociable and outgoing. There

were 8 extraversion statements, some that were normally scored from 1-5, 1 *being strongly disagree* and 5 *being strongly agree* (e.g., *Is talkative*), and some that were reverse scored. Those

reversed questions were re-scored so that the total scale is in the direction of high extraversion.

There were 8 neuroticism questions, some normally scored (e.g., *Is depressed, blue*) from 1-5, 1

being strongly disagree and 5 being *strongly agree* and some that were reverse scored (e.g., *is

relaxed, handles stress well*). Those reversed questions were re-scored so that the total scale is in

the direction of high neuroticism.

The Self-Talk Scale (STS; Brinthaupt et al., 2009) was used to measure inner monologue.

The STS has 16 items with on responses on a 1-5 scale, 1 being *never* and 5 being *always*. There

is a total score and then a score for each of the 4 subscales including: **social assessment**, wanting

to rehearse/reenact what someone has said to another person in conversation and possibly recre-

ating that conversation in an ideal way (e.g., *I'm imagining how other people respond to things I've said*); **self-reinforcement**, which includes feeling of pride associated with one's' accomplishments when something good has happened (e.g., *I'm proud of something I've done*); **self-criticism**, which involves feeling discouraged or critical about one's' actions or self in response to something they have said or done (e.g., *I should have said something differently*); and **self-management**, which entails figuring out what one should do or say and then providing instructions on how to follow through with said action (e.g., *I need to figure out what I should do or say*) (Lysiak, 2019).

Along with the use of quantitative scales, we took a qualitative approach using a self-report method in an effort to gain further insight into the real-time internal monologue. We created a set of questions to gauge the participants' feelings about their internal monologue. They consisted of three questions that probed the function of self-talk as well as whether participants' self-talk was affected by COVID-19, or vice versa. Finally, we asked participants how they felt about their self-talk after taking this survey.

General content analysis was performed on the qualitative data to determine the consistent responses in order to draw conclusions (Drisko & Maschi, 2016). I analyzed answers to the various qualitative responses while establishing a set of codes that seemed consistent throughout the data. Based on the established codes, I was able to draw themes that allowed me to draw generalizable conclusions regarding my hypotheses.

Results

Quantitative Analysis

Table 1. Means, Standard Deviations, and Cronbach's alpha for measures.

	Mean	Std. Deviation	Cronbach's alpha
Depression (TPHQ) (Depression)	16.84	5.66	.80
Anxiety	19.52	6.36	.79
Extraversion	22.84	3.68	.85
Neuroticism	27.49	6.35	.81
Self-Talk (total)	60.36	10.57	.78
Self-Criticism	14.27	4.31	.79
Self-Reinforcement	13.60	3.69	.83
Self-Management	16.72	2.88	.81
Social-Assessment	15.48	3.84	.80

Table 1 demonstrates the mean and standard deviation for each of the measures I am using. I used Pearson correlations and linear regression to test the hypotheses of interest. Table 2 has the zero-order correlations for all of the measures. There were substantial intercorrelations between anxiety, depression, and neuroticism as would be expected.

Hypothesis 1 predicted that people who are lower on the introversion scale (more introverted) are likely to use more self-talk, was not supported $r = .07$, $p = .39$. Counter to my hypoth-

esis introversion was significantly related to a particular kind of self-talk, self-reinforcement, *r* = .21, *p* = .04 such that those higher on introversion do less self-talk. The data show that both Depression and Anxiety are significantly correlated with total self-talk. These data support hypothesis 3 which predicted that people who experience anxiety and depression would have higher rates of internal monologue. Moreover, as I predicted in hypothesis 3, self-critical self-talk was more prevalent with depressed people as results showed that anxiety and depression had strong, significant relationships with self-critical self-talk. I also predicted that self-reinforcement may be present for people with anxiety, however the data showed no significant correlation with self-reinforcement and anxiety.

Table 2. Correlations between Depression, Anxiety, Personality and Self-Talk measures

	PHQ	Anxiety	Extraversion	Neuroticism	Self-Talk Scale	Self-criticism	Self-reinforcement	Self-Management	Social-Assessment
Depression (PHQ)	1.00	.743**	-0.154	.589**	.502**	.513**	0.095	.383**	.438**
Anxiety	.743**	1	-0.103	.647**	.552**	.659**	-0.004	.415**	.484**
Extraversion	-0.15	-0.103	1	-0.176	0.074	0.027	.209*	0.069	-0.076
Neuroticism	.589**	.647**	-0.176	1	.428**	.523**	0.014	.287**	.372**
Self-Talk Scale (STS)	.502**	.552**	0.074	.428**	1	.737**	.573**	.835**	.778**
Self-criticism	.513**	.659**	0.027	.523**	.737**	1	0.125	.508**	.421**
Self-reinforcement	0.09	-0.004	.209*	0.014	.573**	0.125	1	.381**	.216*
Self-Management	.383**	.415**	0.069	.287**	.835**	.508**	.381**	1	.638**
Social-Assessment	.438**	.484**	-0.076	.372**	.778**	.421**	.216*	.638**	1

** Correlation is significant at the 0.01 level (2-tailed). *.Correlation is significant at the 0.05 level (2-tailed). Listwise N=90

Furthermore, hypothesis 3 stated that neuroticism would be predictive of higher self-talk frequency. This hypothesis was supported by the correlations $r = .43$, $p = .00$ Those who score high on neuroticism are likely to have higher self-talk frequency. Moreover, based on the correlation table people who score high on neuroticism are also likely to be anxious or depressed. To go further, neuroticism, like Anxiety and Depression, also seems to predict the likelihood of more self-critical self-talk along with overall higher rates on self-talk. Hypothesis 1 stated that the factor of extraversion would contribute to self-talk frequency, although extraversion had a significant correlation with self-reinforcement $r = .21$, $p = .04$, generally there were no significant correlations with extraversion and total-self talk frequency. Furthermore, hypothesis 1 (that the factor of extraversion would be predictive of social-assessment self-talk) was not supported by these results.

Table 3. Regression predicting Total Self-talk from Extraversion, Anxiety, Neuroticism, and Depression

	B	Std. Error	t	p
(Constant)	26.442	7.965	3.32	0.001
Total Anxiety	0.578	0.239	2.421	0.018
Tphq (Depression)	0.383	0.252	1.518	0.133
Total Neuroticism	0.193	0.198	0.972	0.334
Total Extraversion	0.474	0.263	1.801	0.075
$R^2 = .353$				

Dependent Variable: Total Self-Talk

A multiple regression was used in order to test the relative contribution of anxiety, depression, neuroticism, and extraversion to predicting self-talk. The results indicated that the model was significant, $F_{(4, 85)} = 11.569, p. = 0.01$ and explained 35.5% of the variance. Anxiety was the strongest predictor of Self-talk ($B = .578$). Although Depression and Neuroticism were correlated with self-talk, that relationship was no longer significant when controlling for Anxiety. Interestingly, there was no zero-order correlation between Extraversion and Self-talk, but after controlling for depression, neuroticism, and anxiety there was a marginal trend such that Extraversion contributed to Self-talk ($B = .474, I = .07$). This was in the opposite direction of my initial hypothesis, with more extraversion predicting more self-talk.

We further explored the relationship of depression and anxiety to a particular kind of self-talk — self-criticism. We regressed depression and anxiety on self-criticism. The results of the regression indicated that the model was significant, $F_{(2,91)} = 35.086, p < 0.01$, explaining 43.5% of the variance. It was found that anxiety significantly predicted self-critical self-talk ($B1 = .438, p < 0.01$). However, when controlling anxiety, depression did not significantly predict this type of self-talk.

Table. 4 Predictors of self-critical self-talk from Anxiety and Depression

	B	Std. Error	t	p
(Constant)	5.43	1.16	4.69	0
Anxiety	0.44	0.08	5.39	.00
Tphq (Depression)	0.02	0.09	0.21	0.84
$R^2 = .44$				

Dependent Variable: Self-criticism

Table 5. Predictors of depression from self-talk subcategories

	B	Std. Error	t	p
(Constant)	3.27	3.1	1.06	0.29
Self-Criticism	0.52	0.14	3.82	0
Self-Rein-forcement	-0.06	0.15	-0.41	0.68
Self-Manage-ment	0.06	0.25	0.23	0.82
Social-As-sessment	0.38	0.17	2.24	0.03
$R^2 = .320$				

a Dependent Variable: Tphq (Depression)

Since it is not clear whether self-talk leads to depression and anxiety or whether they lead to self-talk, a regression was performed predicting depression from the types of self-talk. The results of the regression demonstrate the model was significant. $F_{(4,88)}=10.372$, $p<.001$ explaining 35% of the variance. It was found that self-criticism significantly predicted depression ($B = .523$). This is consistent with the correlations in Table 2. With the data presented in Table 4., findings showed depression did not predict self-critical self-talk. Furthermore, social-assessment significantly predicted depression ($B = .382$) even when controlling for the other types of self-talk. The more a person engages in self-critical talk, and social–assessment talk, the more depressed

they were. Engaging in self-reinforcement and self-management talk was not related to depression once we controlled for self-critical and social-assessment talk.

Table 6. Predictor of anxiety from kinds of self-talk.

Coefficients

	B	Std. Error	t	p
(Constant)	4.04	3	1.35	0.18
Self-Criticism	0.82	0.13	6.28	0
Self-Rein-forcement	-0.27	0.14	-1.9	0.06
Self-Manage-ment	0.02	0.24	0.1	0.93
Social-As-sessment	0.45	0.16	2.74	0.01
R^2 = .50				

Dependent Variable: Total Anxiety

Our final regression sought to determine state anxiety from types of self-talk. The regressions results shows that the model was significant, $F_{(4,88)}$ = 22.075 and explained 50% of the variance. Self-criticism significantly predicted state anxiety ($B1$ = .824, p < 0.01). Social-assessment also significantly predicted state anxiety ($B1$ = .448, p < 0.01). This suggests that a person scoring high on social assessment self-talk is likely to experience high rates of anxiety. Interestingly, even when controlling for self-criticism and social-assessment, there is a non-significant trend where self-reinforcement is inversely related to state anxiety (p = .060, B. -.268).

Qualitative Analysis

Using a general coding scheme of review, codes, and theme determination, I was able to draw conclusions from the extended response questions. Due to the fact that the first three questions had shorter responses and were not as open-ended as the latter questions related to COVID-19 and feelings about self-talk, the results are depicted as conclusions drawn from codes. Whereas the later questions relating to COVID-19 and their perception of self-talk are more generalized. Examples from both types of extended response questions can be found in Appendix B.

When asked to respond to, "I talk to myself when…" participants' responses clustered around several themes, including **stress/emotion, social situations, concentrating/recall, anxiety, decision making,** and **self-regulation**. First, and most common, participants said they talk to themselves when they feel stressed. Often, they described **stress** with **emotion (stress/emotion),** for example: *"when i'm anxious. when i feel happy or sad. when I'm hurt. when I feel like sh*t. when i'm in an uncomfortable situation."* Therefore, we can conclude that participants use their internal monologue when they feel overwhelming emotions.

Second, participants consistently reported that they talked to themselves in some sort of **social situation** (*"when I am confronted with external stimuli (ex person, place, or thing) that is unexpected & I must figure out how to respond/act")*. That social situation could be with a group of friends or reflecting on conversations they had with others.

Third, we found participants were using their internal monologue when they were trying to **concentrate and recall**. Often this was used in response to work or school. A participant responds, *"I am trying to figure something out aloud, I am studying."*

Fourth, participants stated that they talked to themselves when they had **anxiety**. A participant quotes, *"I'm worried/i have anxiety."* We coded anxiety separate from emotions because of participants' explicit use of the words anxious/anxiety.

Fifth, participants reported they used their internal monologue when they were **making decisions**. For example, *"When I am stressed, busy, and when I am making a large life decision financially."*

Finally, participants used their inner monologue when they were **self-regulating**. Self-regulation was coded when a participant processed their thoughts or emotions. We also coded self-regulation for when a participant gave themselves self-support (*"I talk to myself when I am anxious, organizing or planning, trying to calm, motivate, or critique myself")*. Results from this question showed that self-regulation was the most popular reason for engaging in internal monologue. These data provide tentative support for hypothesis 3, which relates to cognitive disruption, and hypothesis 2 that predicts more self-talk to create a closer relationship with the self. Responses showed people turning inward when they need to make decisions, cope with strong emotions, and reflect on social talk, which implies their own self is the most reliable resort to draw conclusions.

Participants' responses to "I talk to myself about…" showed several themes, including **responsibilities, relationships, conflicts, wishes, regulatory, and recall**. **Responsibilities** refer to work, school, assignments, and deadlines (*"college, work, home/life responsibilities")*. **Relationships** were friends, partners, and family (*"What would happen if I were to run into my best friend from childhood, my time in marching band, my future, and things in my past that I should have done differently")*.

We also coded relationships in response to conversation rehearsal. We coded **conflicts** for fights, interpersonal issues, personal issues and future consequences (*"different solutions to problems I may have. When it's not about solving a problem, usually I will talk to myself (using my inner voice) about different plans I may have for the weekend or daydreaming to pass the time."* We established the code **wishes** in repose to participants stating scenarios that a person wants to do or undo, and imaginations a person creates (*"Scenarios that could happen, decisions I have to make, comments about what currently happening in front of me, things I have a hard time understanding and when I am trying to prepare myself for something")*. **Regulatory** code includes feelings and general thoughts about surrounding life that are not stated as friends, family or work including personal emotions. Regulatory showed thoughts about what to say and decisions that participants wanted to make (*"situations, decisions and choices, feelings and emotions, tasks")*.

From the data it is apparent that the regulatory process is most prevalent when asking participants what they talk to themselves about. This suggests that self-talk participants make common use of their self talk for regulatory purposes, to help them process life and cope with everyday stressors and demands.

Participants responses to the question, "the reason I talk to myself is for/because" followed several themes, including **organization, coping, social purposes, recall, and self-motivation**. **Organizing** refers to organizing/clarifying the thoughts running through a person's mind (*"It is easier to get through things when I am able to organize my thoughts and to take breathers at times")*. **Coping** refers to getting through situations or thoughts, helping with the self-regulatory process, and self-reassurance. (*"To figure things out, to let out all the stuff bottled inside my head, to help my mental health/ make me feel less alone")*.

We used the code **social situations** when participants referred to being with people and when they mentioned the lack of social situations. When participants mentioned social situations, they also used language that suggested coping was also part of the reason for self-talk. Which leads us to believe social situations and coping may coincide (*"it is comforting, It makes me feel less alone, and conversations with people I am not comfortable with scares so it is nice to review what I want to say"*). Participants mentioned **recall** as a reason for self-talk (*"so I don't forget what I need to remember in a short time"*).Finally, **self-motivation** was seen used by several participants throughout the dataset. Self-motivation was seen as getting encouragement for work but also encouragement for personal growth (*"mostly problem solving, but also I talk to myself about things I look forward to so I can stay motivated"*).

Overall, participants reported using self-talk most for coping purposes, which is in line with the themes emerging from the previous questions. These results provide tentative support for hypothesis 2 regarding the self and internal monologue. The positive effects self-supporting self-talk has on the regulatory process suggest that it may aid people in coping with negative events and situations in their lives.

We drew three main conclusions from participants' responses regarding how their self talk may have been affected by COVID-19. First, participants explained that living through the pandemic has affected their mental health, and in turn their self-talk. (*"it definitely has heightened my anxiety, which causes me to talk to myself more frequently than pre covid times"*). Second, participants mentioned that the life adjustments that occurred alongside the pandemic caused a shift in their participation in self-talk (*"Because I go to close to no social places and have less time to talk with people, I have been talking to myself more"*). Finally, participants ex-

plained that COVID-19 has shifted the tone and frequency of their self-talk (*"Now I need to talk to myself more and sometimes I feel it is more negative than positive"*).

Regarding whether self-talk helped or hurt them during the COVID-19 pandemic, participants' answers produced two conclusions. First, participants who explained that self-talk helped them during the pandemic seemed to describe a similar style of self-talk to those described in the positive responses to the previous question, "The reason I talk to myself is for/because…". The responses regarding self-talk and COVID-19 are similar because they show the importance of self-regulation, organization of thoughts, and self-supporting self-talk during troublesome times (*"helped because I can sometimes have a hard time wrapping my head around everything that I need to accomplish in a day unless I am able to talk through it out loud. It helps me stay on top of my schedule"*).

Second, the participants who described their self-talk as hurtful showed descriptions consistent with the quantitative findings that showed self-critical self-talk as the most prevalent form of self-talk in anxious and depressed people. Participants reliably showed that their critical self-talk has worsened during this time, which has been consequential for their mental health (*"It has mostly hurt me because I experience dysphoria and worsening symptoms of depression the most when I'm alone with my thoughts"*). Participants who responded by saying it both helped and hurt them remained consistent with the previously stated findings. Self-talk helped with self-regulation, organization of thoughts, and self-support. When self-talk was hurtful, it was critical in tone and harmful to mental health (*"both I think. It has it's benefits, for example it's very useful when I'm trying to figure something out. I'm able to shift my perspective to be as unbiased as possible, and slow down to think rationally. On the flip side, when I make a mistake or do some-*

thing wrong, my brain is the harshest environment. I've gotten better at speaking softly to myself, but ultimately my first reaction is to criticize.")

Analyzing participants' post survey reflections on their self-talk we found several consistent response patterns. First, participants said they noticed their self-talk and felt it was a useful tool to regulate their emotions and thoughts ("*Yes I always have noticed it because it genuinely is a strong guiding force that I rely on in my life to maintain my self-growth & mental health/emotional stability").* This finding is consistent with the findings in the previous open-ended questions, which show that positive self-talk can help self-regulate and in turn be supportive of the self. Second, participants noted that the concept of their internal monologue made them feel uncomfortable and unnatural (*I never really thought too much into it. I know I talk to myself but it was without thinking about it. Recognizing it and giving it a name, It makes me feel like I have some sort of mental issue if I have to talk to myself").*

Third, a group of participants explained their internal monologue was so negative that they intentionally tried to disengage from their self-talk because of the negative effects it has on their mental health ("*Yes, I have but I have not had the time to truly sit down and think about it. I feel awful but, I do not notice because I force myself to stay busy so I do not have to hear the self-talk").*

Discussion

Taken together, the quantitative and qualitative results provide insight into our hypotheses about the role of self-talk. Hypothesis 1 was that extraversion would relate to the amount of self-talk. Specifically, due to a lack of social interaction, introverts would experience higher rates of self-talk. Qualitative and quantitative data failed to support this hypothesis. According to

Brinthaupt's (2019) social-isolation hypothesis, individuals who spent more time alone or who have more socially isolating experiences would report more frequent self-talk. Brinthuapt's research moderately supported the social isolation hypothesis and found that people who were more introverted tended to report more self-managing self-talk compared to others who reported higher self-critical self-talk. Our findings, however, did not support introversion as being a predictor of overall self-talk or self-managing self-talk. Furthermore, introversion was related to self-directing self-talk but in the opposite direction. However, qualitative findings showed that the loneliness and isolation forced by COVID-19 had an impact on self-talk frequency, which does provide some support for social isolation hypothesis.

Loneliness and isolation are far more relevant during the time of the COVID-19 pandemic. With more people being forced to stay inside and postpone gatherings, the likelihood of a person engaging in self-talk is heightened. Furthermore, mental illness such as anxiety and depression has seen a spike during the pandemic (Abbott, 2021). Brinthaupt (2019), suggested that individuals who experience short-term or long-term isolation (such as living alone or being socially disconnected) may be motivated to compensate for the limited or unsatisfactory experiences resulting in increased levels of overall or specific kinds of self-talk.

Our findings from the qualitative portion of the study showed that COVID-19 caused a general increase in either self-regulatory (regulation of emotions, thoughts, feelings) self-talk, or self-critical self-talk, which involves feeling discouraged about oneself and criticizing oneself from something said or done (Lysiak, 2019). Therefore, although the social isolation hypothesis was not supported with a relationship to introversion/extraversion, it was tentatively supported by qualitative data relating to COVID-19. These findings suggest that social isolation may matter

differently for self-talk in the short vs. long term. Future research is needed to analyze the precise conditions under which social isolation hypothesis in fact predicts individual behavior.

Hypothesis 2 predicted that there would be a better connection with the self if higher rates of internal monologue were seen in introverts. Although extraversion did not predict self-talk, the connection with self seemed to be strengthened depending on the function of self-talk. Oleś and colleagues (2020) describe the concept of self as being apparent in self-talk functions such as self-organization, the stipulation of social dialogues, and general self-reflection. These functions of self-talk are integral in identity construction and our concept of self (Oleś et al., 2020). Our findings further support Oles et al's research. One of the qualitative questions asked participants what their self-talk was about. Results showed organization, relationships, and coping to be central purposes of self-talk. Furthermore, the participants who reported positive self-talk for social-assessment, self-reinforcement, or self-management seemed to find their internal monologue supportive, leading me to believe it is part of their identity. One participant says, *"I see myself as my closest friend and tend to use my own consciousness as an outlet."* Another stated, *"I feel like my own inner voice is the source of my happiness and sanity. I feel safest with my own thoughts and judgments."* This is consistent with Brintrhaupt's (2019) claims that self-talk provides a central thread to our conscious experience and is integral to our sense that we have a coherent enduring self.

Additional responses from questions asking participants if they noticed their self-talk and feeling toward it is located in Appendix B.

| "yes I always have noticed it because it genuinely is a strong guiding force that I rely on in my life to maintain my self-growth & mental health/emotional stability" |
| "I was very much aware of it. It provides a channel to vent some frustration when alone, or distract myself from things around me." |
| "I find it beneficial to self talk and talk out loud as it helps release inward pressures that could be stored up. It helps with resolving issues by talking out loud to find solutions." |

Although, people who report more positive self-talk seem to have a closer relationship with their concept of self, those who report self-critical self-talk do not seem to have any closer relationships with themselves, perhaps due to the negative effects their self-talk has on their mental health. Brinthaupt and colleagues (2020) state that people who have positive schizotypal tendencies might use self-talk to manage or compensate for their cognitive, perceptual, or even interpersonal disruptions through their self-talk by integrating a self-regulatory focus. Brintraupt et al 's proposal held true for people struggling with mental illness who were able to use positive areas of self-talk. However, for those with self-critical self-talk, their internal monologue was detrimental, even causing them to want to separate from their self-talk identity altogether. A participant explains, *"I feel awful but, I do not notice because I force myself to stay busy so I do not have to hear the self-talk."*

Our final hypothesis was that people who were diagnosed with anxiety and depression would experience higher rates of internal monologue. This hypothesis was supported by both

qualitative and quantitative data. Brinthaupt (2019) cognitive disruption hypothesis states that experiences that are cognitively disruptive (such as anxiety, obsessive-compulsive tendencies, and schizotypy) will be associated with higher rates of internal monologue. Our data support the cognitive disruption hypothesis. We further found that self-critical self-talk is most prevalent in people experiencing mental illness such as anxiety and depression. However, the direction of causality in this relationship is unclear. As Brinthaupt suggests, while critical/ruminative self-talk could cause the mental illness, mental illness may also cause negative self-talk.

Further investigation is needed on this important issue. Research has shown that distanced self-talk, in which the person takes a third-person point of view (i.e, names and non-first-person pronouns), could promote self-reflection and higher emotional regulation by allowing the person to distance themselves and even reframe their negative experiences (Orvell et al., 2020). Shpancer (2020) further explains that even small shifts in language during introspection can consequently influence a person's ability to regulate their thoughts and emotions. As seen from our findings, people who are able to use their self-talk in a regulatory way often enjoy it and say it is a useful tool in their day-to-day lives.

Moreover, some even attach some of their identity to their self-talk, bringing them closer to their concept of self. Research has shown that self-distancing self-talk reduces people's focus on the cause of emotional arousal during negative experiences and reorients them toward seeking insight and closure using emotional regulation in their self-talk (Shpancer, 2020). Therefore, incorporating distanced self-talk with people who experience mental illness or self-critical self-talk could resolve some negative experiences.

The current study carries several implications. Understanding internal monologue may provide a deeper understanding of how the mind works, and how individuals self-regulate behavior. Knowing when, what, and why we use internal monologue has implications for various factors involved in health and well-being in clinical and non-clinical settings such as the education system, work settings, sports, and in therapies (Morin et al., 2018). This research could be relevant to cognitive therapies who treat anxiety or depression. For example, if patients were experiencing a high volume of negative internal monologue, understanding the impact of that would provide insight to clinicians who are looking for treatment options. Patients could be analyzed to see if they are experiencing high volumes of self-critical self-talk. Methods to help shift their internal monologue to a more positive manner could promote better mental health outcomes. One limitation to our study is the lack of gender and age diversity. Our study consisted of primarily college age females. Future studies should be done to analyze age and gender differences in self-talk, although few differences have been found in previous research (Morin et al., 2018).

Conclusion

This project investigated internal monologue and its relation to personality and psychopathology. We questioned whether introverts would experience higher rates of internal monologue, if so did internal monologue bring a better connection with the self, and did anxious and depressed people experience higher rates of specifically negative internal monologue. We found that extraversion did not factor into self-talk frequency. However, forced isolation due to COVID-19 did factor into some increase in individuals' internal monologue in both positive and negative ways. Positive self-talk aimed toward helping the individual regulate their thoughts and emotions brought people closer to themselves and seemed to be beneficial.

Finally, people who were anxious and depressed, or suffering from mental illness, did report an increase in self-talk frequency. Further, these people exhibited high rates of self-critical self-talk. In response, we propose that distanced self-talk may be beneficial to these individuals and could help shift their internal monologue to a more positive experience. Findings from this study suggest that self-talk is essential to understanding how individuals deal with daily stressors and life demands. Our research provides additional information as to the function of internal monologue and suggests new research opportunities in the effort to understand self talk and optimize its use to benefit people's mental health.

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Appendix A: IRB Approval

__X__ **Original Review**

INSTITUTIONAL REVIEW BOARD _____ Continuing
Review
_____ Amendment

Dear Dr. Acker,

With regard to the employment of human subjects in the proposed research:

HS # 20/21-38

Acker & Conley: Inner Dialogue: Relationship to Personality and Psychopathology

THE INSTITUTIONAL REVIEW BOARD HAS TAKEN THE FOLLOWING ACTION:

__X___ Approved	_____ Disapproved
_____ Approved with Stipulations*	_____ Waiver of Written Consent Granted
__X___ Limited/Exempt/Expedited Review	_____ Deferred

* Once Stipulations stated by the IRB have been met by the investigator, then protocol is APPROVED.

1. As Principal Investigator, you are responsible for ensuring that all individuals assisting in the conduct of the study are informed of their obligations for following the IRB-approved protocol.

2. It is the responsibility of the Principal Investigator to retain a copy of each signed consent form for at least four (4) years beyond the termination of the subject's participation in the proposed activity. Should the Principal Investigator leave the university, signed consent forms are to be transferred to the IRB for the required retention period.

3. If this was a limited, exempt, or expedited review, there is no need for continuing review unless the investigator makes changes to the proposed research.

4. If this application was approved via full IRB committee review, the approval period is one year, after which time continuing review will be required.

5. You are reminded that you must promptly report any problems to the IRB, and that no procedural changes may be made without prior review and approval. You are also reminded that the identity of the research participants must be kept confidential.

Date: __27 January 2021 _____ Signed: Meredith Frey
Chairperson
(Revised January 2019)

Appendix B: Responses to Open-Ended Questions

"I talk to myself when…"

Emotion/Stress
I am stressed or stuck on a problem
when i'm anxious. when i feel happy or sad. when i'm hurt. when i feel like sh*t. when i'm in an uncomfortable situation.
I'm stressed, nervous, confused
im stressed im worried i have anxiety

Social Talk
1) When I am confronted with external stimuli (ex person, place, or thing) that is un-expected & I must figure out how to respond/act.
i do something embarassing i open up to someone
Thinking about what to say next
When im thinking before speaking at any point during the day

Anxiety
im worried i have anxiety
Stressed or anxious, processing, self-affirming, questioning myself or others
I'm alone, depressed, anxious, or concentrating.

I feel anxious or need to reassure myself

Decision-Making
When making important life decisions
When I am stressed, busy, and when I am making a large life decision financially.
- Deciding on something
when I am bored, don't want others to know what I'm thinking about, and when making decisions

Self-Regulation
I talk to myself when I am anxious, organizing or planning, trying to calm, motivate, or critique myself.
I'm doing something random or calming
-happy -in need of encouragement -upset
I feel stressed or need reassurance

"I talk to myself about"

Wishes
Scenarios that could happen, decisions i have to make, comments about what currently happening in front of me, things I have a hard time understanding and when I am trying to prepare myself for something.

My thoughts, feelings, emotions, things that people say to me, things I say to myself, things that have happened or that might happen
what I'm going to do, things that have recently happened, made up situations that will not happen

Regulatory
situations, decisions and choices, feelings and emotions, tasks
Schoolwork, emotions, how I feel physically
the steps I need to take to complete the difficult task, God, scripture, my concerns, my pleasures, my joys

"the reason I talk to myself is for/because"

Organizing
clarity, expression, understanding
It is easier to get through things when I am able to organize my thoughts and to take breathers at times
clear out confusion to figure out what I need

Coping
I need to process on my own I need to cool off
im my own best friend, its how I internalize things

To figure things out
To let out all the stuff bottled inside my head
to help my mental health/ make me feel less alone

Social Situations

It is comforting, It makes me feel less alone, and conversations with people I am not comfortable with scares so it is nice to review what I want to say.

It needs to be done! I know talking to myself is important especially when I have no social contact in a while. So, I talk to myself for reassurance and comfort.

To keep myself company or to process and understand things

Recall

to remember to complete task
self motivation
decision making -pros and cons

So I don't forget what I need to remember in a short time

- it makes more sense sometimes
- sometimes I just need to talk
- to make it easier to remember

Do you think your self-talk was affected by COVID-19?

"Covid has brought so many other issues that mentally, it can become a lot to handle"

"It definitely has heightened my anxiety, which causes me to talk to myself more frequently than pre covid times."

"I've experienced times of loneliness and sadness, and I think this had a big impact on how I spoke to myself mentally for a while."

"I've been too hard on myself because i've been alone too much. i would tell myself that i'm stupid, etc. it's like a constant battle with myself."

think it has lead to a lot more free time for me to think about my thoughts more."

"Frustrated with the way it is now and not knowing when and if it'll end."

"Because i go to close to no social places and have less time to talk with people, I have been talking to myself more."

"Sometimes I believe Covid has impacted the way I talk to myself due to being down at first about how my senior year ended. I also think about how family gatherings are not the same or seeing some of my friends"

"I feel since Covid has began, I have talked to myself more than I have in the past."

"It has made it more difficult to control what I talk to myself about and how mean/ nice it is."

"Now I need to talk to myself more and sometimes I feel it is more negative than positive."

"I talk to myself in a more positive way. I'm kinder to myself."

Did self-talk help or hurt you during the pandemic?

"Helped because I can sometimes have a hard time wrapping my head around everything that I need to accomplish in a day unless I am able to talk through it out loud. It helps me stay on top of my schedule."

"Helped. During such difficult times, talking myself through issues has helped keep me calm and sane."

"I feel it has helped me. It is a way to cope with the loneliness that sometimes sweeps over me."

"It helps me rationalize with myself and my thoughts and actions."

"It has helped me because it organizes my thoughts."

"Both I think. It has it's benefits, for example it's very useful when I'm trying to figure something out. I'm able to shift my perspective to be as unbiased as possible, and slow down to think rationally. On the flip side, when I make a mistake or do something wrong, my brain is the harshest environment. I've gotten better at speaking softly to myself, but ultimately my first reaction is to criticize."

"I feel indifferent about this topic as it's helped me since it allows a way to cope with my ability to have to socially distance and not see some of the people I genuinely would've. Although, it has hurt me as it's caused me to overthink a lot more, causing me to be more anxious all the time."

"Self-talk has helped and hurt me during this pandemic. I have been able to gain somewhat better control of my mental health but due to some choices I made early on in my freshman year, I have slowly started feeling unworthy or unimportant in some people's lives."

"It's been a mix of both, it's helped me better understand myself but it has also contributed to my self esteem negatively."

How do you feel about your self-talk after taking the survey? Have you noticed it? If not, how do you feel now?

"yes I always have noticed it because it genuinely is a strong guiding force that I rely on in my life to maintain my self-growth & mental health/emotional stability"

"I was very much aware of it. It provides a channel to vent some frustration when alone, or distract myself from things around me."

"I find it beneficial to self talk and talk out loud as it helps release inward pressures that could be stored up. It helps with resolving issues by talking out loud to find solutions."

"I never really thought too much into it. I know I talk to myself but it was without thinking about it. Recognizing it and giving it a name, It makes me feel like I have some sort of mental issue if I have to talk to myself."

"I've never noticed how MUCH I talk to myself, makes me feel like I'm a little strange and maybe not completely normal."

"It makes me feel as if I talk to myself more than the average person"

"My self talk has made me feel guilty. I have researched being a psychopath because of the way I over analyze everyone's words and actions and break them down in my head so that I know the perfect and exact response for every situation that will allow me to get the outcome I want. Sometimes I feel like the depth I analyze things could lead to me being manipulative as I tend to remember words and actions very deeply and can bring them up in later conversations and arguments."

"Yes, I have but I have not had the time to truly sit down and think about it. I feel awful but, I do not notice because I force myself to stay busy so I do not have to hear the self-talk."

"I've noticed it, and often hate it because I'm always tearing myself down in my head over every action/move I make, or words I say out loud"

Appendix C: Full Survey From Qualtrics

Inner Dialogue: Relationship to Personality and Psychopathology

Survey Flow

Block: Default Question Block (1 Question)

Standard: Demographics (7 Questions)

Standard: Self-Talk Open Ended Questions (5 Questions)

Standard: Patient Health Questionnaire (2 Questions)

Standard: State Trait Anxiety Inventory (3 Questions)

Standard: Big 5 Personality Inventory (2 Questions)

Standard: Self-Talk Scale (2 Questions)

Standard: Extended Response Questions (8 Questions)

 Start of Block: Default Question Block

Q1 Consent Form The Department of Psychology at Otterbein University supports the practice

of protection for human subjects participating in research. The following information is provided

for you to decide whether you wish to participate in the present study. You should be aware that

even if you agree to participate, you are free to withdraw at any time without penalty. We are in-

terested in studying the internal monologue and how it relates to extraversion, mental health, and how a person feels about their concept of self. You will be participating in a set of demographic questions followed by several questionnaires and written questions. It is estimated this will take no longer than 30 minutes complete. There is a chance that some of these questions may make you uncomfortable. You may skip any question for any reason or discontinue the study at any point. In case the questions make you feel uncomfortable and you want to seek help, we have provided some campus resources here and at the end of the survey. We encourage you to reach out.

Your participation is solicited although voluntary. We assure you your identifiers will remain anonymous as all times and will not be associated with the research findings. All information received will be referred to and identified by codes and numbers. This survey should take roughly 30 minutes to complete and should be taken all in one setting. We appreciate your responses. If you would like additional information concerning this study before or after it is complete, please feel free to contact us at any time. For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact the Institutional Review Board (IRB@Otterbein.edu). For other questions or concerns about this study, you may contact the principal investigator, Dr. Michele Acker (macker@otterbein.edu). Additional Resources (these will also be listed at the end of the survey): Otterbein Counseling Center: (phone) 614-823-1333 (email) counseling@otterbein.edu Women's Gender & Sexuality Resource Center (phone) 614.823.1028 (email) sashworth@otterbein.edu Dr. Judy Guion-Utsler in the Chaplain's Office: (phone) 614.823.1409 (email) jguionut-

sler@otterbein.edu By clicking on the next button below, I consent to be in this study and affirm

that I am at least 18 years of age.

End of Block: Default Question Block

Start of Block: Demographics

Q28 We will begin by asking you six demographic questions to understand your background.

This information is confidential and will not be associated with the research findings.

Q4 What is your age?

_____

Q8 What year are you?

○ Freshmen (1)

○ Sophomore (2)

○ Junior (3)

○ Senior (4)

Q9 What is your major?

_____

Q10 What is your minor? If not applicable reply N/A.

_____

Q5 What is your ethnicity?

○ African American (1)

○ Hispanic (2)

○ Asian (3)

○ White (8)

○ Native Hawaiian or Pacific Islander (6)

○ American Native or Alaska Native (5)

○ Other (9) _____

Q3 What is your preferred sexual identity?

○ Female (1)

○ Male (2)

○ Gender-non conforming (4)

○ Other (5) _____

End of Block: Demographics

Start of Block: Self-Talk Open Ended Questions

Q42 We would now like to give you a chance to explain how and why you talk to yourself. By answering the open-ended questions that follow you will be able to explain a bit more about yourself while also explaining your self-talk.

Q32 We use inner speech (the little voice inside our head) when we silently talk to ourselves about all sorts of things, at different times, and for various reasons. Sometimes we also talk to ourselves out loud. Please try to recall talking to yourself in general these last 6 months. Provide 3 examples of self-talk instances for each 3 blocks that follow. Use as few words as possible; do not write full sentences.

Q33 Block 1: I talk to myself when...

_____

_____

_____

_____

Q34 Block 2: I talk to myself about...

_____

_____

_____

_____

_____

Q35 Block 3: The reason I talk to myself is for/because...

_____

_____

_____

_____

End of Block: Self-Talk Open Ended Questions

Start of Block: Patient Health Questionnaire

Q38 We will now provide nine statements for you to answer to gauge how you have been feeling recently.

Q12 Over the past two weeks how often have you been bothered by any of the following problems?

	Not at all (1)	Several days (2)	More than half the days (3)	Nearly every day (4)
1. Little interest or pleasure in doing things (1)	○	○	○	○
2. Feeling down, depressed, or hopeless (4)	○	○	○	○
3. Trouble falling or staying asleep, or sleeping too much (5)	○	○	○	○
4. Feeling tired or having little energy (6)	○	○	○	○
5. Poor appetite or overeating (7)	○	○	○	○
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down (8)	○	○	○	○

7. Trouble concentrating on things, such as reading the newspaper or watching television (10)

○   ○   ○   ○

8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual (14)

○   ○   ○   ○

9. Thoughts that you would be better off dead or of hurting yourself in some way (16)

○   ○   ○   ○

End of Block: Patient Health Questionnaire

Start of Block: State Trait Anxiety Inventory

Q38 Thank you for telling us how you have been feeling recently. Now, can you tell us how you

have been feeling right now? Answering the statements below will do just that.

Q19

A number of statements which people have used to describe themselves are given below. Read

each statement and then select the answer that indicates HOW YOU FEEL RIGHT NOW, that

is, at this moment. There are no right or wrong answers. Do not spend too

much time on any one statement but give the answer which seems to describe your present feel-

ings best.

	Not at all (1)	Somewhat (2)	Moderately so (3)	Very much so (4)
1. I feel upset. (1)	○	○	○	○
2. I feel frightened (2)	○	○	○	○
3. I feel nervous (3)	○	○	○	○
4. I feel confused (5)	○	○	○	○
5. I feel jittery (6)	○	○	○	○

Q20

A number of statements which people have used to describe themselves are given below. Read

each statement and then select the answer that indicates HOW YOU GENERALLY FEEL. There

are no right or wrong answers. Do not spend too much time on any one

statement but give the answer which seems to describe how you generally feel.

	Not at all (1)	Somewhat (2)	Moderately so (3)	Very much so (4)
1. I feel that difficulties are piling up so that I cannot overcome them. (1)	○	○	○	○
2. I worry too much over something that really doesn't matter. (2)	○	○	○	○
3. Some unimportant thoughts run through my mind and bothers me. (3)	○	○	○	○
4. I take disappointments so keenly that I can't put them out of my mind. (4)	○	○	○	○

| 5. I get in a state of tension or turmoil as I think over my recent concerns and interests. (5) | ○ | ○ | ○ | ○ |

End of Block: State Trait Anxiety Inventory

Start of Block: Big 5 Personality Inventory

Q39 Now that we know how you have been feeling we are going to provide 17 statements for you to answer to tell us about your personality. You will notice that the numbers are NOT numerically correct, this is for data collection purposes. You are almost halfway done.

Q18

Here are a number of characteristics that may or may not apply to you. For example, do you agree

that you are someone who likes to spend time with others? Please select the statement to indicate the extent to which you agree or disagree with that statement.

	Disagree strongly (1)	Disagree a little (2)	Neither disagree nor agree (3)	Agree a little (4)	Strongly agree (5)

1. Is talkative (1)	○	○	○	○	○
4. Is depressed, blue (4)	○	○	○	○	○
5. Is original, comes up with new ideas (5)	○	○	○	○	○
6. Is reserved (6)	○	○	○	○	○
9. Is relaxed, handles stress well (9)	○	○	○	○	○
11. Is full of energy (11)	○	○	○	○	○
14. Can be tense (14)	○	○	○	○	○
16. Generates a lot of enthusiasm (16)	○	○	○	○	○
19. Worries a lot (19)	○	○	○	○	○
21. Is generally quiet (21)	○	○	○	○	○

24. Is emotionally stable, not easily upset (24)	○	○	○	○	○
26. Has an assertive personality (25)	○	○	○	○	○
29. Can be moody (28)	○	○	○	○	○
31. Is sometimes shy, inhibited (30)	○	○	○	○	○
34. Remains calm in tense situations (33)	○	○	○	○	○
36. Is outgoing, sociable (35)	○	○	○	○	○
39. Gets nervous easily (38)	○	○	○	○	○

End of Block: Big 5 Personality Inventory

Start of Block: Self-Talk Scale

Q39 Now that you have helped us understand how you feel and given us insight on your personality we would like to know why you talk to yourself. By answering the 16 statements below you will be giving us insight to why you talk to yourself.

Q21

Researchers have determined that all people talk to them-selves, at least in some situations or under certain circumstances.Each of the following items concerns those times when you might "talk to yourself" or carry on an internal conversation with yourself (either silently or out loud).

Determine how true each item is for you personally by selecting the appropriate answer next to each item. Assume that each item begins with the statement: "I talk to myself when . . . " Be sure to rate each item. Please take your time and think carefully about each item. Use the following scale to rate each item:

	Never (1)	Seldom (2)	Sometimes (3)	Often (4)	Very Often (5)
1. I should have done something differently (1)	○	○	○	○	○
2. Something good has happened to me (23)	○	○	○	○	○

3. I need to figure out what to do or say (24)	○	○	○	○	○
4. I'm imagining how other people respond to things I've said (25)	○	○	○	○	○
5. I'm really happy for myself (26)	○	○	○	○	○
6. I want to analyze something that someone recently said to me (6)	○	○	○	○	○
7. I feel ashamed of something I've done (7)	○	○	○	○	○
8. I am proud of something I've done (8)	○	○	○	○	○
9. I'm mentally exploring a possible course of action (9)	○	○	○	○	○

10. I'm really upset with myself (10)	○	○	○	○	○
11. I try to anticipate what some-one will say and how I'll respond to him or her (11)	○	○	○	○	○
12. I'm giv-ing myself instructions or directions on what I should do or say (18)	○	○	○	○	○
13. I want to reinforce my-self for doing well (19)	○	○	○	○	○
14. Some-thing bad has happened to me (20)	○	○	○	○	○
15. I want to remind my-self of what I need to do (21)	○	○	○	○	○

16. I want to
replay what I
have said to
another per-
son (22)

○   ○   ○   ○   ○

End of Block: Self-Talk ScaleStart of Block: Extended Response Questions

Q40 Thank you for completing the scales above, you are almost done. Before you end this sur-

vey we would like to ask some final questions about your mental health history and how

COVID-19 has impacted your self-talk tendencies.

Q7 Have you been diagnosed with any mental health issues? Check all that apply.

☐ Anxiety (1)

☐ Depression (2)

☐ Other (4) _____

☐ No, I have no mental health diagnosis. (5)

Q23 Do you feel COVID-19 has impacted the way you talk to yourself?

○ Not at all (7)

○ Somewhat (8)

○ Very much so (9)

Q31 Explain your answer for the above question.

_____

_____

_____

_____

_____

Q24 Do you feel self-talk has helped you or hurt you during this pandemic? Explain.

_____

_____

_____

_____

Q43 Finally, we would like to know your thoughts while participating in this survey.

Q26 While completing this survey, what are some things that have come to mind? Explain how you have been talking to yourself.

_____

_____

_____

Q27 Prior to taking this survey have you noticed your self-talk? If not how does recognizing

your self-talk make you feel? If so, how do you feel about the self-talk you experience? Explain.

_____

_____

_____

End of Block: Extended Response Questions