

Local News, Billionaire Owners, and Political Accountability

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Abstract

Local newspapers provide valuable information needed for political accountability and representation. Yet the economic decline of such news outlets has led to a recent trend of high-profile billionaires from outside sectors purchasing newspapers. In this article, we analyze the changes in the content published by the *Los Angeles Times* and *San Diego Union-Tribune* after being acquired in 2018 by Dr. Patrick Soon-Shiong, a billionaire businessman and scientist who vowed to invest heavily in his newsrooms. Using a series of automated tools for the analysis of textual content as well as novel datasets comprising the main articles of and official tweets by these newspapers between 2017 and 2019, we find partial evidence that Soon-Shiong's ownership has resulted in increases in high quality, local journalism compared to other newspapers. While previous scholarship highlights the potential harm caused by billionaires at the helm of news outlets, our results suggest civic-minded billionaires may increase the provision of quality news needed for local political accountability.

Can billionaire owners save local newspapers? At their best, local newspapers are key facilitators of political representation and accountability. Newspapers inform voters about their representatives' actions in office, candidates in upcoming electoral races, and the work of their local government. In so doing, they provide citizens with the facts needed to cast an informed vote that punishes poorly performing incumbents and rewards the good; even more, their watchdog presence creates incentives for elected officials to behave ethically (Arnold 2004). Scholarly research supports this normative view of the press and highlights the benefits of local news in particular: local news is critical for facilitating retrospective voting (Hopkins and Pettingill 2018); the provision of more local news seems to reduce polarization (Darr et al. 2021); and the closure of local newspapers increases corporate misconduct (Heese et al. 2021).¹

The importance of the news media coupled with the well-documented crisis of local newspapers (e.g., Abernathy 2020 and Peterson 2021), highlights a need for potential solutions that can revive the floundering local news industry. In addition to the emergence of non-profit local news outlets (Glaser 2020), the rise of the high-profile billionaire stepping in to “save” newspapers from their downward trajectories has been applauded as one potential solution (Kennedy 2018). Prominent examples over the last decade include Jeff Bezos and *The Washington Post*, Patrick Henry and *The Boston Globe*, Glen Taylor and *The Minneapolis Star Tribune*, and Dr. Patrick Soon-Shiong and the *Los Angeles Times (LAT)*—the latter of which is investigated in this paper. Billionaires are particularly attractive buyers because of their ability to withstand short-term profit losses and invest much-needed capital into their newsrooms (Kulish 2021).

Despite their potential for good, billionaire owners represent equal potential for harm given their non-journalistic backgrounds and penchant for changing their minds once mired in the complexities of today's media landscape (Gelles 2018). There have even been rumors that Soon-Shiong would sooner-than-later sell the *LAT* (Alpert 2021). Evidence also suggests

¹But see Bailard (2022) for evidence that local newspapers are influenced strongly by demand-side factors.

billionaires’ motives for backing media companies may not be purely philanthropic or even prestige-based; their own political careers may benefit from their media holdings (Durante et al. 2019), or they may use their newspapers to influence political outcomes in ways that are advantageous to themselves or their businesses and that contribute to inequalities in politics (Grossman et al. 2021).

This paper investigates the effects of civic-minded billionaire newspaper owners using the case of Soon-Shiong’s June 2018 purchase of both the *LAT* and the *San Diego Union-Tribune* (*SDUT*). Our work builds on prior research that suggests media ownership matters significantly for the provision of news: ownership changes (Archer and Clinton 2018) and structure (Dunaway 2008, 2013; Dunaway and Lawrence 2015; Peterson 2021) affect what and how information is transformed into news, in addition to influencing their ideological slant (Grossman et al. 2021; Martin and McCrain 2019).

Our contribution lies in our investigation of how and to what extent civic-minded billionaire owners affect the content of their news outlets. In doing so, our analyses adjudicate between two likely possibilities: while these individuals may be benevolent billionaires capable of “saving” their newly acquired assets and achieving their self-established goals of increasing “news quality”, it is also possible that their non-journalistic experience and ability to pivot to alternative streams of revenue may undermine their success to create meaningful changes, which could affect their willingness to invest in these news outlets for the long term and curb the paper’s downstream success. Further, should these owners succeed in improving their newspapers, our results also shed light on how long it takes for these changes to emerge.

We put Soon-Shiong’s tenure to test by examining changes in the quality and content of news in the *LAT* and *SDUT* before and after Soon-Shiong’s June 2018 purchase using a variety of novel datasets. The quality of news is operationalized in two ways: (i) using existing measures of the newspapers’ original investigative reporting and accountability language, and (ii) identifying the prevalence and quality of local vs. national news content featured on

several newspapers’ daily main sections and X (formerly known as Twitter) feeds.

We examine changes in the *LAT* and *SDUT* before and after Soon-Shiong’s purchase and benchmark these changes against concurrent changes in other prominent Californian newspapers (e.g., the *San Francisco Chronicle*), as well as other out-of-state newspapers that are comparable to the *LAT* and *SDUT* (e.g., the *Houston Chronicle* and *New York Times*).

We find evidence that Soon-Shiong’s tenure at both the *LAT* and *SDUT* has increased the newspapers’ production of investigative reporting, a sign of increased quality. Further, although we could not find evidence that his ownership increased the overall number of local news covered in the main sections and official X feeds of the *LAT* and *SDUT*, we observe substantive changes in the topics of the news pieces. Overall, we find that since Soon-Shiong took over the newspapers, these publish a higher proportion of hard local news as well as those related to the entertainment industry (which in California can be considered a “local economy” topic). Along these lines, we observe a decrease in topics with a national focus and/or related to soft (local and national) news. However, we observe that this pattern is stronger in the content posted in the *LAT* and *SDUT*’s X account than in the actual published newspapers, suggesting different communication strategies that could be based on factors associated with costs (space constraints, vetting process) and viewership (age groups, engagement).

Our results speak to the possibilities of billionaires as a rising class of newspaper owners in the modern media landscape. While (less civic-minded) billionaires’ ownership certainly has the potential for increased ideological slant that exacerbates political inequality (Grossman et al. 2021), our results suggest billionaires may also contribute to the provision of quality news needed for local political accountability, at least in the short term.

The Importance of Media Ownership

Since 2004, more than one in four local newspapers have closed, leaving thousands of journalists without jobs and resulting in the proliferation of “news deserts” across the US (Abernathy 2020). The decline of the local news industry can be attributed to many factors, including technological changes in the media landscape as well as the dire financial conditions stemming from the 2008 Great Recession and more recently, the COVID-19 pandemic (Abernathy 2020). Scholarly research demonstrates the many benefits of local news (e.g., Darr et al. 2021; Heese et al. 2021) while simultaneously underscoring the importance of identifying ways to address the financial strains faced by the newspaper industry.

While the rise of non-profit media organizations represents one solution to the financial state of local news, others have suggested billionaire owners represent another (Kennedy 2018). The literature highlights the importance of ownership effects, as media owners significantly influence the provision and quality of news in their outlets. Ownership structure affects the quality of issue coverage, tone of news, and amount of game-frame coverage (Dunaway 2008, 2013; Dunaway and Lawrence 2015). Ownership also affects the amount of political coverage (Archer and Clinton 2018) and bias in news coverage (Bailard 2016). In recent years, a new cohort of owners consisting of “vulture” hedge funds who seemingly prioritize profits above content (Abernathy 2016) as well as corporations with political goals (Martin and McCrain 2019) has emerged. Most notably, Sinclair’s expansion in the local television market resulted in substantial changes to these outlets’ content (Hedding et al. 2019), including increases in their coverage of national over local affairs and a rightward shift in their news (Martin and McCrain 2019) that, in turn, affected viewers’ attitudes and vote choice (Levendusky 2021).

In contrast with hedge funds (Abernathy 2016) that deplete their newsrooms of resources, staff, and morale, billionaire news owners are sometimes viewed as a more preferable solution (Kennedy 2018). In theory and (by some accounts) in practice, billionaires who pur-

chase news outlets provide a net benefit to their assets. Their ability to withstand short-term profit losses and their willingness to infuse their outlets with sorely needed cash to experiment with newsroom technology and expand staffing is particularly valuable (Meyer 2014). Similar to conceptions of private, family-owned news outlets (Dunaway 2008), benevolent billionaire owners should be willing to protect and invest in their newspapers for the long-term.

Notably, billionaires tend to discuss their newspaper purchases in philanthropic terms. In John Henry’s op-ed explaining why he bought *The Boston Globe*, he envisioned himself as a “steward” of a “great institution” with “obligations and responsibilities to citizens first and foremost—not to shareholders” (2013). Assessments of Bezos’s roughly decade-long tenure at the *Washington Post* suggest he has largely been a positive force. Bezos has reportedly taken a “hands-off” approach to editorial decisions, while also investing in much needed and profitable improvements to newsroom technology (Alpert and Marshall 2015).

Despite this, other cases of billionaire news owners have not proven as fruitful. In some instances, owners have not taken a hands-off approach. After Sheldon Adelson’s purchase of *The Las Vegas Review-Journal*, journalists at the paper reportedly struggled to deflect his attempts to influence editorial decisions (Ember 2016). His other newspaper, *Israel Hayom*’s, coverage affected elections in a manner that netted Adelson political benefits (Grossman et al. 2021), highlighting the potential for political goals to motivate billionaire owners instead of philanthropic ones. In other instances, billionaires have abandoned their news outlets after several years once the complexities (and expenses) of running a modern newsroom become apparent. These wealthy owners typically lack news experience (Soloski 2019) and a longstanding commitment to journalism as a whole; this coupled with their ability to pivot back to more profitable endeavors has resulted in some extremely wealthy owners selling their news assets after a few years (e.g., Chris Hughes and *The New Republic*) (Gelles 2018).

Taken together, it is unclear whether civic-minded billionaire owners of local newspapers are a net positive or negative for their news outlets, and there are reasons to expect

either possibility. Little scholarly work empirically examines billionaire owners' impact on their local newspapers' content before and after their purchase with a specific focus on changes in the quality of local news, which facilitates political accountability at the city and state level. In this paper, we adjudicate between these possibilities by focusing on the case of Soon-Shiong, the *LAT*, and the *SDUT*.

Patrick Soon-Shiong, the *LAT*, and the *SDUT*

On February 7, 2018, Dr. Patrick Soon-Shiong's purchase of the *Los Angeles Times*, *San Diego Union-Tribune*, and a few other community newspapers was announced (Hufford 2018); the deal was finalized June 18, 2018 (James 2018). Soon-Shiong, a transplant surgeon and billionaire entrepreneur who had enjoyed success in biotechnology and pharmaceuticals, paid \$500 million for the southern California newspapers and assumed \$90 million in pension liabilities from the embattled Tronc, Inc.

Like other billionaires acquiring local newspapers, Soon-Shiong spoke of his purchase of his hometown paper with a benevolent, philanthropic tone, including a pledge that he would prioritize "continuing the great tradition of award-winning journalism" (Hufford 2018). He also promised to inject stability to the paper, save the newsroom from further staffing cuts, and recommit to the paper's investigative reporting, largely reversing course from the volatility of the Tronc years (James 2018). Soon-Shiong even took a "crash course" in journalism in the interim between announcing and finalizing the deal, reaching out to news luminaries including Norman Pearlstine (who ultimately served as the first executive editor under Soon-Shiong), Marty Baron, Judy Woodruff, and Donald Graham.

Since then, Soon-Shiong has invested millions in renovating a physical space for the *LAT* to meet the demands of a modern newsroom and has increased the number of journalists on staff from about 400 to 540 (Turvill 2022). He has also been vocal about his ambitious goals for increasing digital-only subscriptions and cultivating specializations in podcasts and

video (James 2018). In 2020, against the backdrop of the country’s reckoning on race as well as that of his own newsroom, he wrote a deeply personal editorial, speaking to his own experiences as a person of color and his desire for the *LAT* to accurately reflect the lived experiences of the people of Los Angeles. In so doing, Soon-Shiong acknowledged the past missteps of the *Times* in both its content and hiring practices, and explicitly restated his commitment to the outlet, which he viewed as a means of giving back to his community (Soon-Shiong 2020).

Despite this, there have been rumors he was going to sell the paper out of frustration with its losses and slow digital audience growth, and due to his more recent focus on developing a Covid-19 vaccine (Alpert 2021). He has also hedged expectations about the breadth of his investment in the news industry writ large. Soon-Shiong, who first invested in Tribune Publishing in 2016, had a 24% stake in the company at the time of Alden Global Capital’s 2021 purchase of Tribune. Though some hoped he would help prevent the sale to the hedge fund given its reputation for being particularly unfriendly to journalism (Ellison 2021), he ultimately declined to oppose a shareholder vote over the deal, instead abstaining. Even so, Soon-Shiong continues to be vocal about his commitment to his California newspapers and often speaks of his vision that the papers become a part of his family’s legacy (Ellison 2021; Turvill 2022).

Hypotheses

Taken together, there are reasons to expect Soon-Shiong’s purchase of the *LAT* and *SDUT* has resulted in potential improvements to the newspapers, but also potential setbacks. And while there is evidence that billionaire owners influence the political slant of their news assets (Grossman et al. 2021), their effect on other dimensions related to local news quality and original investigative journalism are less known, particularly when considering more civic-minded billionaires. These elements of news content are critical to processes of political learning and democratic accountability. Our first hypothesis posits billionaire owners can increase the

quality of and emphasis on local news in their media outlets. Soon-Shiong's financial investments in his newsrooms and public commitments to upholding the award-winning legacy of the *LAT* in particular suggest he may have positively impacted his outlets' journalism.

H₁. Soon-Shiong increased the focus on local news and quality of news content in his newspapers.

Despite this possibility, there is evidence that billionaire owners invest in news outlets primarily to influence public opinion and achieve specific political goals (Grossman et al. 2021), and that ownership with political aims may reduce the amount of local news produced (Martin and McCrain 2019). There have also been rumors that Soon-Shiong might sell the *LAT* and is potentially more focused on developing a COVID-19 vaccine (Alpert 2021). Given this, it is possible that his ownership has had a net negative effect on his news outlets, whether by neglect or more direct action.

H₂. Soon-Shiong decreased the focus on local news and quality of news content in his newspapers.

Finally, if billionaire owners prioritize consumer preferences and profits when determining content (Prat and Strömberg 2013) and previous owners did the same, it is possible that no changes are observed over time. Further, even the best-intentioned billionaires must deal with the complexities of the local news industry. Soon-Shiong inherited a newsroom at the *LAT* in particular that had experienced chronic underinvestment by Tronc, which reportedly slowed his attempts to fix the newspaper (James 2021). Given this, a null effect is possible, and if observed, would undermine the potential for philanthropic billionaire owners to be considered an effective solution to the current local newspaper crisis.

H_0 . *Soon-Shiong did not affect the content of his newspapers.*

We examine several elements of the *LAT* and *SDUT*'s content before and after Soon-Shiong's presence at the papers to gain a better understanding of which possibility best characterizes the effects of this change in ownership. To assess the quality of news content over time, we focus on the amount of hard versus soft news, local versus national news, and investigative reporting that promotes political accountability. In so doing, we draw on methods incorporating automated text analysis of newspaper content and tweets. We view coverage of hard, local news, as well as the production of investigative reporting that promotes accountability across these contexts as indicators of Soon-Shiong's level of resource investment in quality journalism.

Data

To adjudicate between our hypotheses, we draw on three sets of analyses that examine: (i) the quality of news in terms of investigative reporting and use of language that promotes political accountability; (ii) the prevalence of local vs. national news covered in the main sections and social media posts of a newspaper, and (iii) the typology of topics covered in news and X posts, with a focus on different types of hard vs. soft and local vs. national news. Each part of our empirical strategy relies on different datasets (published news articles, newspapers' X feeds, and newspapers' front pages), and utilizes a variety of methodological approaches. In so doing, we are able to provide a comprehensive look at the news content produced by modern newspapers. Table 1 provides an overview of the datasets including sources, authors, and descriptions.

News quality: Investigative reporting and Accountability-related language

For the first analysis, we use existing measures of investigative reporting and accountability language developed by Turkel et al. (2021) to capture quality and depth of news articles. To measure two of our main outcome variables, we use a subset of the publicly released data that the aforementioned authors compiled comprising information and metadata for the articles published in seven local newspapers between January 2017 and December 2019. Our first dependent variable, the *investigative score (IS)*, is the probability that a given article is “investigative”.² This measure is based on an article’s full text, and identifies whether common investigative reporting terms and features are found in it (e.g., FOIA, audits, and an investigation-related word count). Included in this measure is the degree of influence the article has on subsequent news coverage, since investigative reporting tends to set the agenda for societal discussions and future news articles (Turkel et al. 2021). The *investigative scores, IS*, are the output of a neural network trained on 562 articles that were manually coded as investigative. Our unit of analysis is the newspaper-week, thus we sum the *IS* of all articles published by a newspaper i in a given week w to build our *Investigative Reporting* variable.³

The *Accountability Words* variable captures the proportion of words associated with this characteristic, such as “accuse”, “allege”, “complain”, or “denounce”, in all the articles published by newspaper i in week w . Although the count of accountability-related words is one of the several inputs that compose the *IS*, we posit that the particular concept it encompasses should be analyzed on its own. Further, it is just one of 320 features (or

²Turkel et al. (2021) defined an article in the training set as “investigative” if it 1) won first place or runner-up for a relevant journalism award; 2) was entered into the database of the Investigative Reporters and Editors (IRE) for a regular IRE contest; or 3) was hand-selected by a team of reporters for the weekly newsletter *Local Matters*. They provide an extensive explanation of the construction of these scores in the Supplemental Information of their article.

³We use the sum of the *IS* to capture the amount of “investigative” content which is our theoretical outcome of interest. Using the quantity for a binary classification (i.e., investigative vs. not investigative) does not allow us to distinguish more nuanced differences between articles. For example, an article with an *IS* of 0.89 would be classified as a 0, despite having a significant load of characteristics generally associated with investigative reporting.

“covariates”) in the *IS* model, and we are using a transformation of the variable (proportion instead of raw count), that holds a low correlation with *IS* (=0.106).

Using these data, we compare the amount of investigative reporting and accountability language in the *LAT* and *SDUT* before and after Soon-Shiong’s purchase, benchmarked against other California newspapers (not owned by Soon-Shiong) and other local newspapers in the US with similar prominence to both the *LAT* and *SDUT*.⁴ Although the purchase of the *LAT* and *SDUT* was completed in June of 2018, for this analysis we define the beginning of the “Post-purchase period” six months after that date. This is due to both data availability and the expectation that articles with investigative content take several months to complete (Houston 2010). This also applies to the focus on accountability and the use of words associated with it. For this analysis, we conduct a difference-in-differences model, as well as its dynamic version to explore changes over time.

Prevalence of local vs. national news

For our second analysis, we examine changes in the proportion of local news published by newspapers per week. The data for this analysis comprises around 41,000 articles published by several newspapers (see section above) in their front page or main section.⁵ We focus on these prominent and salient sections because they are the best reflection of the priorities of the editorial teams. We compiled these data from Newsbank, as well as close to 3,700 articles from the front pages of the *LAT* provided by *Newseum*.

Our measure of prevalence of local news is the proportion of local articles published by a newspaper in a given week. To determine whether an article is local or national, we employ a Bidirectional Encoder Representations from Transformers (BERT) tokenizer and model. We use a BERT tokenizer to pre-process the raw text data, segmenting it into tokens suitable

⁴The list includes newspapers in the Top 10 national circulations included in Turkel et al.’s (2021) dataset.

⁵We identified these by looking at the name and number of the sections covering the most prominent news in each paper. These include: “News” (in first 2 pages), “A”, “A DESK”, “Cover”, “Front”, “Main News”, “Metro”.

for input into a neural network architecture ⁶. Subsequently, we fine-tuned a pre-trained BERT model on a dataset comprising 300 articles selected at random from the LA times pool (200 for training and 100 for testing). The authors developed a set of rules that three students had to review and study before tagging each of the 300 news piece according to its “local” nature. The re-training process involved adjusting the parameters of the BERT model through backpropagation on our specific dataset, optimizing its ability to discern between local and national news. This approach leverages the contextual understanding embedded within BERT’s architecture to capture nuanced linguistic patterns, thereby enhancing the accuracy and robustness of our classification system. The accuracy of the classifier was 0.82. The appendix includes more information about the descriptive summary of this measure, as well as details regarding the performance of the model and the validation of this indicator.

Typology of local news in social and traditional media

Our final analysis focuses on the topics and substantive content of the news articles published in the newspapers’ main sections, as well as in their social media feeds. We conduct this analysis with two objectives. First, the weekly prevalence of local news provides information about the overall focus that outlets put on local topics. However, not all local news are the same; the distinction between “hard” and “soft” news is also an indicator of quality and relevance.⁷ Second, by comparing distribution platforms (i.e. printed/online articles vs. social media posts) we can assess *whether* billionaires change the content and focus of their papers under different resource constraints and with potentially different audiences in mind. Social media posts are another important form of journalistic content given the priority news editors and reporters place on Twitter (Lewis and Molyneux 2018; Molyneux and McGregor 2021).

For this analysis, we complemented the 41,000 articles described in the previous sec-

⁶See Appendix for more details about BERT.

⁷However, see ??? for a discussion of the conceptual, theoretical, and empirical challenges of measuring the hard vs. local nature of news.

tion, with the tweets/posts from the official Twitter/X accounts of the newspapers included in previous sections starting in the year before and ending in the year after Soon-Shiong’s purchase (2017-2019). We use a structural topic model (STM) approach to identify topics related to hard vs. soft news, as well as those with a local vs. national focus. We then compare changes in these topics published by Soon-Shiong’s newspapers against other newspapers in the state before and after his purchase, in both traditional articles and social media posts.

In line with previous definitions of these categories (Curran et al. 2009), we consider tweets mentioning hard news as those that discuss politics, economic issues/policies, climate change, and investigations of high profile cases, while soft news topics include coverage of sensationalist crime, sports, weather, and traffic. Though coverage of the entertainment industry could be perceived as solely soft news, we posit the *LAT*’s coverage of the business of Hollywood represents important hard local news for the artists, producers, agents, and executives in film and television living in the region. Based on qualitative exploration of the topics derived from each STM, we manually defined the national vs. local and hard vs. soft news focus of these tweets.

Taken together, our analyses draw on a diverse set of data that represent the broad range of a modern newspaper’s journalistic output: text, images, and tweets. In doing so, we can characterize the myriad ways in which billionaire owners might affect their news outlets’ reporting and whether their leadership is a net benefit or harm to the quality of that content.

Table 1: Description of datasets

Measure	Compiled by	Source	Newspapers	Time frame	Description
Investigative reporting and Accountability	Turkel et. al. (2021)	NewsBank articles	The Fresno Bee (CA)	Dec. '16 - Dec. '19	Articles published in selected newspapers. Public release of the data includes text features based on the full text of the articles, associated metadata and indicators developed by the authors such as the investigative reporting index (IRI) and the number of words in each article related to “accountability.” Main outcomes: Sum of Investigative Scores and proportion of Accountability-related Words.
			Houston Chronicle (TX)		
Front page/Main section articles	Authors	Newsbank and Newseum Front-pages	Los Angeles Times (CA)	Jan. '17 - Dec. '19	Text and metadata of articles posted by the newspaper in its first sections. Main outcome(s): Proportions of 10 topics and local vs. national indicator.
			The Sacramento Bee (CA)		
			San Diego Union-Tribune (CA)		
			San Francisco Chronicle (CA)		
			Houston Chronicle (TX)		
			St. Louis Post-Dispatch (MO)		
			Star Tribune (MN)		
			Tampa Bay Times (FL)		
			LA Times Front page articles		
			The Fresno Bee (CA)		
Tweets/ X posts	Authors	Academic Twitter	The Fresno Bee (CA)	Jan. '17 - Dec. '19	Text and metadata of tweets posted by the newspaper in their official Twitter feeds. Re-tweets and mentions are NOT included in the dataset. Main outcome(s): Proportions of 10 topics.
			Los Angeles Times (CA)		
			San Jose Mercury News (CA)		
			The Orange County Register (CA)		
			The Sacramento Bee (CA)		
			San Diego Union-Tribune (CA)		
			San Francisco Chronicle (CA)		
San Francisco Examiner (CA)					

Results

Results: Investigative and accountability reporting

As explained above, we measure quality of news by focusing on (i) the level of investigative reporting, and (ii) the proportion of accountability-related words in the articles that several local newspapers publish. Our empirical analysis relies on a difference-in-differences strategy to identify not only the overall effect of the purchase of the *LAT* and the *SDUT* by a billionaire on the aforementioned variables, but also the medium and long term effects of that event. We consider $k = 1, 2$ outcomes for $i = \{1, \dots, 9\}$ newspapers across $t = \{1, \dots, 134\}$ weeks between December 2016-June 2018, and December 2018-December 2019. The variable D_{it} takes a value of 1 if the newspaper was purchased by Soon-Shiong at any point in time (i.e., *LAT* and *SDUT*), and 0 otherwise. Further, $P_{it} = 1$ indicates that the observation lies in the period starting in December 2018 and further (six months after the purchase and until the end of 2019). Under a parallel trends assumption for which we provide evidence in Figure 6 in the Appendix, the interaction between D_{it} and P_{it} allows us to capture the average treatment effect among the treated (ATT_k) equivalent to $\mathbb{E}[Y_{k1i,Post} - Y_{k0i,Post} | D_i = 1]$. Intuitively, this represents the differences in the k th outcome between the observed values of the *LAT* and *SDUT*, and the projected values had they not been purchased by a billionaire. The regression has the following form where τ_k represents the ATT for each of the $k = 2$ outcome variables:

$$Y_{kit} = \alpha_k + \delta_k D_{it} + \gamma_k P_{it} + \tau_k (D_{it} \times P_{it}) + X'_{it} \beta_{\mathbf{k}} + \epsilon_{kit}, \quad (1)$$

where X_{it} is a set of covariates including whether the paper is from California, the number of articles published in the week, and two sets of dummies for the year-week and the newspaper. Table 2 presents the results from this model. The first column shows that, in general, both the *LAT* and the *SDUT* publish articles with higher ISs than other local

and comparable newspapers. Soon-Shiong’s purchase made this difference even larger: the ATT=1.367 is positive, reliable and accounts for roughly a third of a standard deviation of the IS distribution.

The second column of Table 2 shows the results for the “accountability-related words proportion” which indicate that once we control for all relevant confounders, Soon-Shiong’s papers tended to publish articles with a lower proportion of these words than the rest of the newspapers in the sample prior to his purchase. Further, we see an overall increase between the pre- and post-purchase periods in this outcome for non-Soon-Shiong papers, but no effect of the purchase on his newspapers as evidenced by the unreliable and almost zero coefficient of the interaction. Thus, when comparing the pre- and post-periods, there does not seem to be an identifiable effect of Soon-Shiong’s influence on the content of the news articles with respect to the accountability dimension.

Table 2: Effect of billionaire purchase on quality of content

	Investigative Reporting (1)	Accountability Words (2)
Owned by Soon-Shiong	7.496* (0.694)	-0.001* (0.0002)
Post-purchase	0.395 (0.390)	0.001* (0.0001)
Owned by Soon-Shiong * Post-purchase	1.367* (0.431)	0.0002 (0.0002)
Californian newspaper	-1.433* (0.287)	0.0004* (0.0002)
Num. articles	0.032* (0.003)	-0.00000 (0.00000)
Constant	0.960* (0.411)	0.011* (0.0002)
Year-Week dummies	✓	✓
N	1,105	1,105
R ²	0.758	0.530
Adjusted R ²	0.722	0.460

* $p \leq 0.05$. Clustered standard errors by newspaper reported.

However, we extend this analysis to explore the varying effects that the purchase

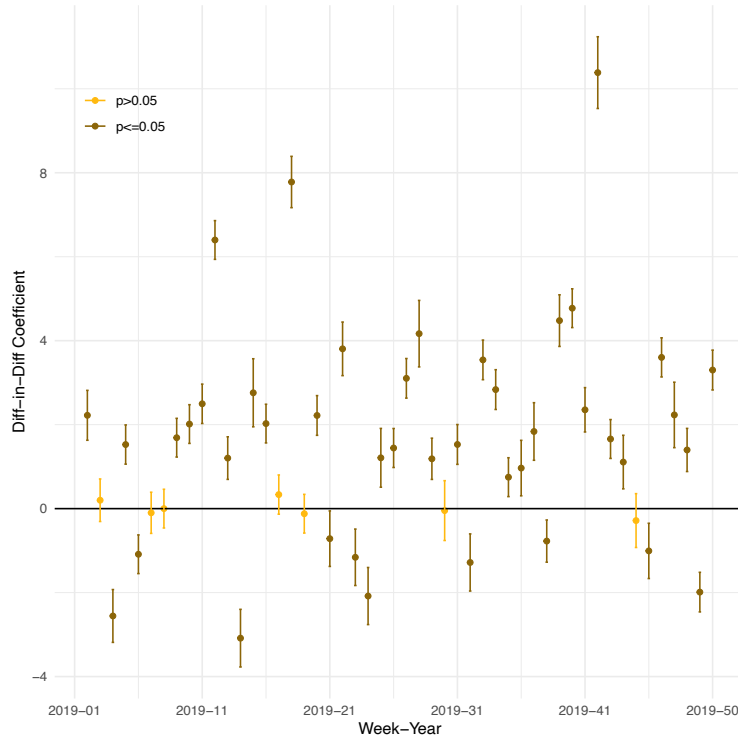
may have had over time on our outcomes of interest. To do so, we conduct a dynamic difference-in-differences model that replaces the “Post-purchase” variable in Model (1), with an indicator for each week post-purchase (after December 2018). This modification allows us to capture differences over time with respect to the pre-Soon-Shiong era to dissect the evolution of changes inside the *LAT* and *SDUT*.

The plots in Figure 6 show the coefficients for these changes and their respective 95% confidence interval. More specifically, each point illustrates the coefficient of the interaction between D_i and the corresponding week. Plot (a) reinforces the results from Table 2 and supports the hypothesis that for most of the post-purchase period, we observe reliable and positive ATTs of Soon-Shiong’s purchase on investigative scores. However, there is no trend in these coefficients that would suggest changes over time. On the other hand, the results for the outcome of Accountability Words show an interesting pattern. Although the overall comparison between periods was not reliably different from zero, the dynamic model indicates increasing positive differences over time. In the first weeks of the post-purchase period (as defined in this analysis), there are not only unreliable but also negative coefficients. However, we observe a changing pattern in the third week of March, where most of the coefficients become positive and reliably different from zero, and also increase in magnitude over time. This could be a sign of a substantive increase in the degree to which Soon-Shiong’s outlets have promoted political accountability during his tenure as owner. Taken together, these results provide evidence in favor of H_1 ’s expectations that Soon-Shiong increased the quality of news content in his outlets.

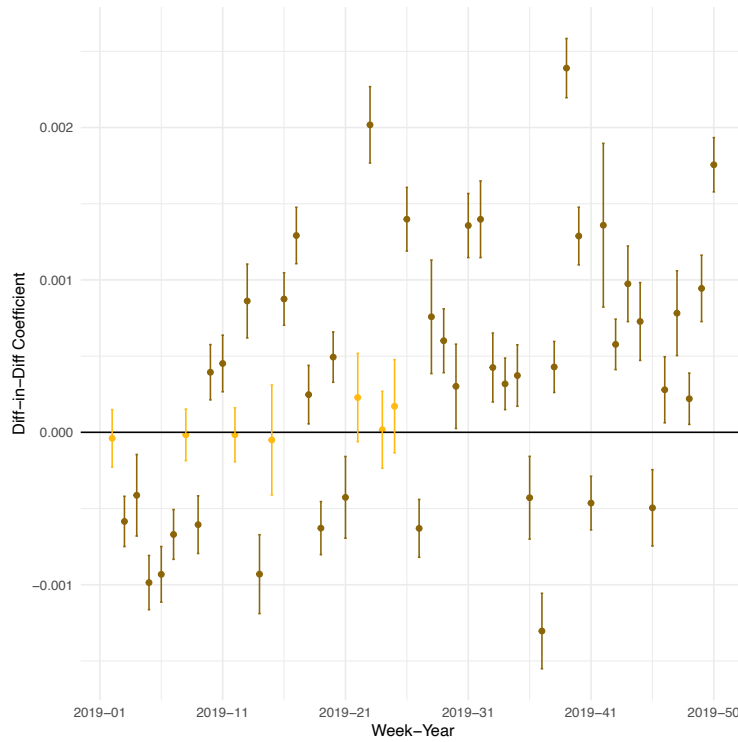
Results: Prevalence of local vs. national news

To analyze the proportion of local news per week in each of the newspapers under analysis, we used an automated approach to classify our ~ 41000 articles as “local” or “not local”. To determine whether a news article was local, we recorded and evaluated “yes” or “no”

Figure 1: Effects over time



(a) Investigative Reporting Index

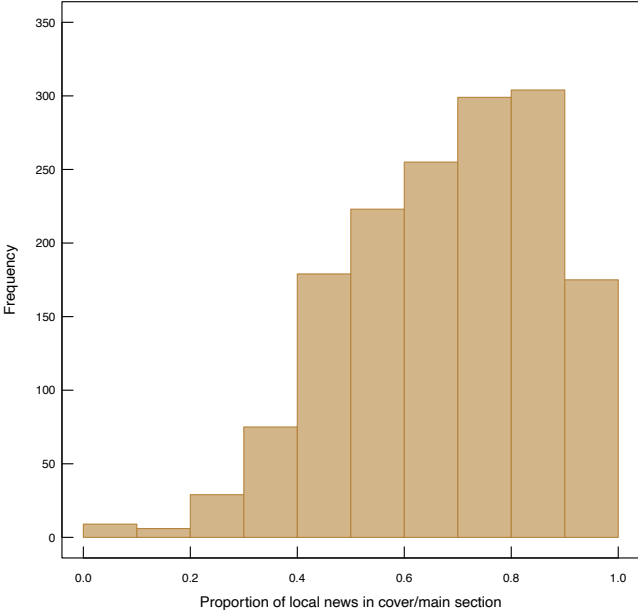


(b) Accountability words proportion

answers to several questions regarding the text covered in each piece (e.g. Does the article mention a national celebrity/figure? Is the event reported in the article happening in the city or state of the newspaper publishing it? Is the article mostly focused on the implications that the event described has for the city/state of the newspaper?) Examples of headlines of local news are “Some city potholes lasted years on to-do list” or “Turning downtown retail mall into business campus: an untested avenue.” Conversely, a non-local news piece could cover issues such as “Pentagon brass puts brakes on transgender ban” or “Hurdles remain for oil pipeline; Keystone project debate renewed as White House approves permit,”

Overall we found that 67% of the articles published in the main sections of the newspapers can be considered local. Figure 1, shows the distribution of the weekly proportion of local pieces that we found in all the articles between 2017 and 2019.

Figure 2: Histogram of the weekly proportion of local news



We use the same difference-in-difference model in Eq. 1 to obtain the ATT of the purchase of the *LAT* and *SDUT* by a billionaire on the proportion of local news⁸. The

⁸The plot that supports the parallel trends assumption can be found in the Appendix

results in Table 3 show that the effect of the newspapers’ purchase on the proportion of local news published by the *LAT* and *SDUT* is not distinguishable from zero.

Table 3: Effect of billionaire purchase on prevalence of local news

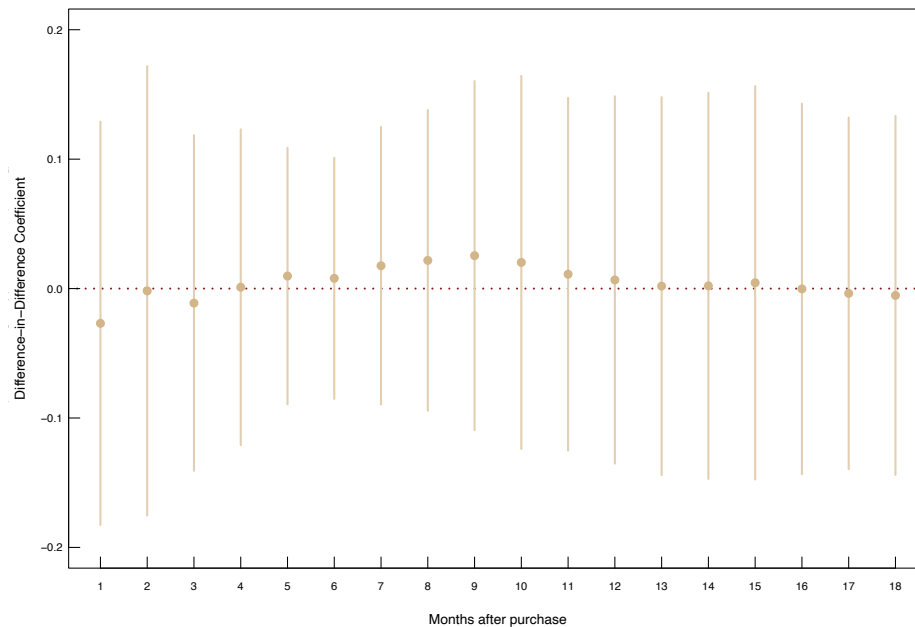
	Proportion Local News
Owned by Soon-Shiong	−0.236 (0.149)
Post-purchase	0.104 (0.151)
Owned by Soon-Shiong * Post-purchase	0.004 (0.028)
Californian newspaper	0.228* (0.034)
Constant	0.478* (0.068)
Year-Week dummies	✓
N	1,312
R ²	0.457
Adjusted R ²	0.378

* $p \leq 0.05$. Clustered standard errors by newspaper reported.

A raw exploration of the trends of this outcome variable, proportion of local news, in Figure 2 suggests increased volatility in the proportion of local news published by the newspapers in the treatment group, especially in the first few months after the purchase. We also observe a spike in the number of local news published after around six months. To assess whether the null effect above might be masking a medium or long term effect, we estimated the diff-in-diff models specified above with different post-treatment sizes: from 1 to 18 cumulative months. Figure 3 shows the diff-in-diff coefficients for each of the 18 periods. Regardless of the number of months after the purchase, we do not observe an effect of Soon-Shiong’s tenure on the proportion of local news published in the *LAT* and *SDUT*.

Although Soon-Shiong did not devote more printed space to local news overall, it could be that there was an increased focus on *some* but not all local news (or themes). Thus, we proceed to dissect the typology and topicality of both newspaper articles and

Figure 3: Effects of purchase on proportion of local news over time



social media posts.

Results: Topicality of local news in articles and social media posts

For the third analysis, we are interested in assessing the changes in content composition of i) the news articles published in the printed versions and ii) the tweets (now X posts) from the official Twitter feeds of the newspapers under analysis. Doing so allows us to understand the full typology of news content – beyond just investigative reporting or accountability words – in Soon-Shiong’s papers before and after his purchase, benchmarked against the tweets of other in-state and comparable local newspapers. For this purpose, we conduct a Structural Topic Model (STM) to identify the underlying themes in the text in each of our two corpora. We initialize a STM in each corpus with 10 topics and a series of prevalence covariates that resemble the model presented in Eq. 1.⁹ We manually define the label of each topic based on a combination of the most exclusive and frequent words, and those with

⁹We selected the number of topics based on an evaluation of indicators like semantic coherence and exclusivity, as well as on a qualitative inspection of the topics obtained from this approach.

the highest probability of being related to it (see Table 4). A summary of two of the most representative texts per topic (defined as having a high proportion of it) can be found in Tables ?? and 7 in the Appendix. Based on a qualitative exploration of these labels and content of the tweets, we also define whether each topic is mostly related to two dimensions: local vs. national and hard vs. soft news.

Then, we estimate the interactive effect of the variables *Owned by Soon-Shiong* and *Post-purchase* on the proportions of these topics in both the articles and the tweets. Figure 4 shows the magnitude of the coefficient of this interaction for each topic and their corresponding 95% confidence interval. The top panel presents the results for the articles in printed version, while the bottom corresponds to social media posts.

When it comes to articles featured in the printed versions of the newspapers, we do not observe many significant changes in the content of news pieces. However, it is worth noting that there is an increase in coverage of public safety and policing, and soft local news related to community stories as a results of Soon-Shiong’s ownership. We can also observe a reliable decrease of national news as well as pieces with content in Spanish.

In contrast, when we analyze the content of the social media posts we see that the proportion of soft local news decreased significantly after Soon-Shiong took over the *LAT* and *SDUT*. Further, the largest relative “cuts” in news content are related to “Sports” and “Sensationalist news” that focus on national cases. There is also a decrease in the coverage of issues in which both Californian and national politicians were involved¹⁰ as well as high profile legal cases.

We also see an increase in the proportion of news related to the “Entertainment industry.” Again, for the particular case of California, this topic can be classified as both “hard” and “soft” news given that Hollywood and the broader entertainment field is a central economic and socio-cultural sector of LA. The increasing emphasis on this topic

¹⁰Given the prominence of (Californian politician) Nancy Pelosi, it was difficult to disentangle politicians representing just the state from national politics. Even coverage of the governors of California (Jerry Brown and Gavin Newsom) tended to discuss their administrations in relation to Trump.

Table 4: Topics identified in Tweets: labels and representative words

	Topic label	Type	Focus	FREX and Highest probability words
Corpus: Articles in printed-version				
1	Energy/Industry	Hard	National	oil, emission, qualcomm, technology, energy, pollution, company
2	Sports	Soft	Local	game, NFL, athlete, Astro, baseball, player, artist
3	Housing/Homelessness	Hard	Local	rent, homeless, cannabis, marijuana, tenant, rental, city
4	Content in Spanish	Soft	Local	que, para, una, por, dijo, año, como
5	Public safety/Policing	Hard	Local	jail, police, prosecutor, inmate, jury, conviction, sentence
6	Spending/Finances	Hard	Local	budget, tax, insurance, bill, Newsom, fund, legislature
7	Soft local news II (health,events)	Soft	Local	patient, hospital, doctor, mother, baby, surgery, vaccines
8	National	Hard	National	democrat, impeach, GOP, republican, Clinton, candidate, Mueller
9	Natural disasters/Climate change	Both	Both	evacuation, storm, flood, rain, wildfire, blaze, dam
10	Immigration	Hard	Both	asylum, border, immigrant, refugee, muslim, navigate, homeland
Corpus: Tweets/X posts				
1	Customer feedback	Other	Local	local, learn, good, need, real, news, bad
2	Hard local news	Hard	Local	decade, number, rate, million, project, via, city
3	Entertainment industry	Both	Both	grammy, emmy, dance, oscar, comic, album, marvel
4	Soft local news I (crime, fires)	Soft	Local	evacuate, acres, county, highway, sheriff, fire, kill
5	Soft local news II (weather, events)	Soft	Local	snow, beer, recipe, garden, rain, wet, forecast
6	National and California interactions	Hard	Both	gop, republican, democrat, supreme, impeach, trump, california
7	High profile cases	Hard	National	misconduct, harassment, tesla, kaepernick, alleged, report, investigation
8	Sensationalist news	Soft	National	cop, mom, police, parent, family, man, woman
9	Front Pages summary	-	-	front, page, seal, today, francisco, story, Diego
10	Sports	Soft	Local	mater, playoff, football, semifinal, game, win, warrior

might also represent a strategic attempt by Soon-Shiong to attract digital subscribers given his newspapers' comparative advantage in covering Hollywood vis-à-vis other newspapers. Further, we see an increase in the proportion of topics "Hard local news" (e.g., worker strikes and state unemployment rates) and "Customer feedback." This result is in line with some of the claims of Soon-Shiong regarding his goals as the new owner of these papers: increase focus on relevant local news, and also an intention to increase the number of subscribers by responding to their needs. Most of the tweets with a high content of the "Customer feedback" topic inquire about the means in which readers consume news, their satisfaction with the products of the newspaper, and even invitations to subscribe by highlighting the message that these outlets are the providers of local and community news. It is worth noting that the proportions of this topic looked almost identical between Soon-Shiong's newspapers versus other California newspapers before the purchase, but show strong differences a bit after the new owner began his tenure (see Figure 8 in the Appendix).

Altogether, we observe important shifts in the content and focus of the news that these newspapers distributed, but only via social media. This suggests that Soon-Shiong's team shaped the content published in the *LAT* and *SDUT* according to their goals and vision, but only using X. The characteristics of this platform increases flexibility in the decision process of what should be printed and published, allows for much shorter editorial processes, and is designed to distribute content that is consumed quickly and, up to a point, carelessly. Thus, when it is cheap to publish articles, we observe a reliable increase in the publication of local and hard news.

Taken altogether the results are supportive of H_1 : Soon-Shiong seemed to improve the quality of and focus on local news in his newspapers, but also of H_0 , the hypothesis of no effect. It depends on the channel under consideration. Evidence for H_1 is particularly pronounced when we focus on the relative increase in his papers' coverage of hard local news and the entertainment industry, as well as their relative decreases in coverage of soft local news such as crime, weather, and sports. Despite this, it is worth noting that Twitter is a

medium where “space” is not constrained so there may be more flexibility in the decisions that newspaper editors and journalists make with respect to the content they publish. However, when it comes to the print edition where 1) space is a limited resource and 2) sections like the front page serve as vehicles for signaling priorities, we observe different patterns.

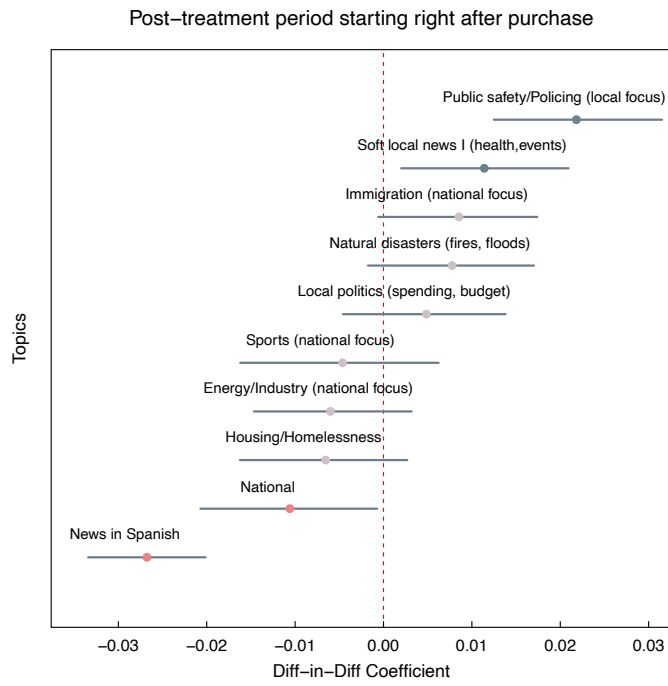
Conclusion

Given the normative importance of local news for political accountability (Hopkins and Pettingill 2018), scholars, journalists, and even some politicians have grappled with ways to address the industry’s decline. One potential option lies in the rise of “benevolent” billionaires like Glen Taylor, John Henry, and Patrick Soon-Shiong, who purchased their local newspapers with the seemingly philanthropic goal of serving the community by reviving these news outlets. While previous scholarship has documented the potential harm that billionaire media owners with ideological goals represent (Grossman et al. 2021), we examine civic-minded billionaires’ potential to improve the quality of and focus on local news content in their papers through the case of Soon-Shiong and his southern California newspapers.

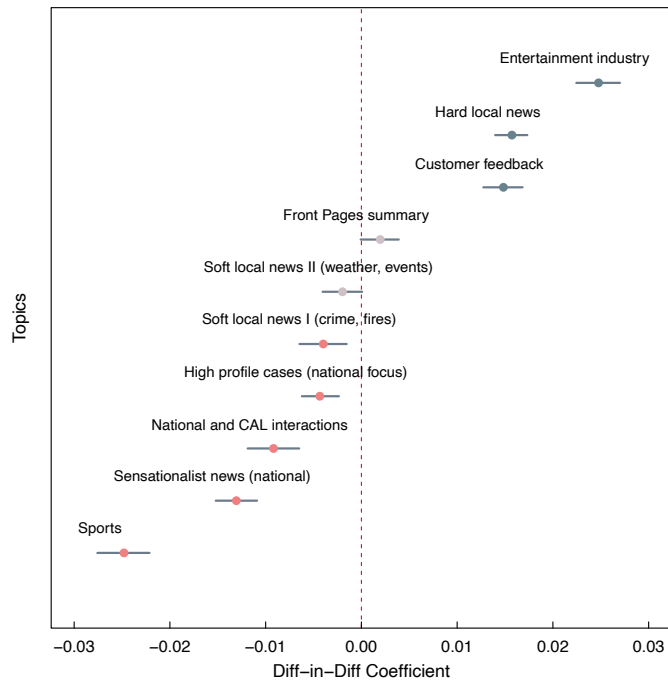
Using three datasets that span the textual and social media content of these newspapers, we examine the effect Soon-Shiong has had on the *LAT* and *SDUT* in comparison to other newspapers. Our results find repeated evidence that his presence at these southern California newspapers has represented a net benefit for their news content. Since his ownership began, the *LAT* and *SDUT* have experienced increases in quality investigative reporting and coverage of hard, local news in comparison with other local newspapers. However, the latter is only observed in social media and not their printed versions, suggesting diverging strategies depending on the costs and viewerships of each platform.

Taken together, the data suggest Soon-Shiong has increased the focus on local news and the quality of news content in his newspapers. This speaks to the potential for good

Figure 4: Effects of purchase by billionaire on topic proportions



(a) Articles in printed version



(b) Social media posts

that philanthropic-minded billionaires might bring to local newspapers.

Despite this, it is worth considering that even if billionaires can “save” newspapers, they are typically a homogenous group (rich, of course, but outside of Soon-Shiong, they are also frequently white men) that does not fully reflect the communities their newspapers serve. They also represent a class of powerful industry players that the news media are charged with holding to account (Gelles 2018). Despite their best efforts to separate the business side of news from the newsroom itself, can newspapers fulfill their normative role in society (i.e., holding those with power to account) if they are owned by the powerful elite? Further, a journalism industry that is increasingly dependent on a handful of billionaires’ whims may also be prone to volatility should these individuals decide to sell their media outlets at any time.

In the end, Soon-Shiong’s investments in the newsrooms at the *LAT* and *SDUT* seem to have paid off. The papers are producing more high-quality content and covering hard, local news more than they used to, compared to other local newspapers. Thus, not all billionaire media owners seem to cause harm to their outlets that contributes to increasing inequality (Grossman et al. 2021); instead some may help improve the processes that facilitate political learning and political accountability at the local level.

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